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September 30, 2019

Via Electronic Filing

The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

RE: South Carolina Energy Freedom Act (H.3659) Proceeding to Establish Dominion Energy South Carolina, Incorporated's Standard Offer, Avoided Cost Methodologies, Form Contract Power Purchase Agreements, Commitment to Sell Forms, and Any Other Terms or Conditions Necessary (Includes Small Power Producers as Defined in 16 United States Code 796, as Amended) - S.C. Code Ann. Section 58-41-20(A)
Docket No. 2019-184-E

Dear Ms. Boyd:

Please find attached for electronic filing the *Prehearing Brief* filed on behalf of the South Carolina Coastal Conservation League (CCL) and Southern Alliance for Clean Energy (SACE) in the above-referenced matter.

Please contact me if you have any questions concerning this filing.

Sincerely,

s/ Lauren J. Bowen

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CERTIFICATE OF SERVICE

I hereby certify that the parties listed below have been served via electronic mail with a copy of the *Prehearing Brief* filed on behalf of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy.

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This 30th day of September, 2019.

s/ Lauren Fry
Lauren Fry

STATE OF SOUTH CAROLINA

DOCKET NO. 2019-184-E

In re: South Carolina Energy)
 Freedom Act (H. 3659))
 Proceeding to Establish Dominion)
 Energy South Carolina,)
 Incorporated's Standard Offer,)
 Avoided Cost Methodologies,)
 Form Contract Power Purchase)
 Agreements, Commitment to Sell)
 Forms, and Any Other Terms or)
 Conditions Necessary (Includes)
 Small Power Producers as Defined)
 in 16 United States Code 796, as)
 Amended) – S.C. Code Ann.)
 Section 58-41-20(A)

**PREHEARING BRIEF OF THE
 SOUTHERN ALLIANCE FOR CLEAN
 ENERGY AND SOUTH CAROLINA
 COASTAL CONSERVATION LEAGUE**

Pursuant to South Carolina Public Service Commission (“Commission”) Order No. 2019-108-H, Docket No. 2019-184-E, the South Carolina Coastal Conservation League (“CCL”) and the Southern Alliance for Clean Energy (“SACE”) (collectively, the “Conservation Groups”), through counsel, file this prehearing brief on certain issues in the current proceeding, which concerns the avoided cost rates for Dominion Energy South Carolina, Inc. (“DESC”). Conservation Groups recognize that intervenors have raised many issues regarding DESC’s filings.¹ This brief focuses on key deficiencies of DESC’s proposed Variable Integration Charge (“VIC” or “the Charge”), as raised by Conservation Groups in its pre-filed expert testimony, and regarding optimization of the

¹ Conservation Groups appreciate the opportunity to file responsive briefs on Oct. 8, 2019 and reserve the right to respond to issues raised by the other parties at that time.

resource plan underlying DESC's avoided cost approach of using the difference in revenue requirements method.

Conservation Groups respectfully request that the Commission reject DESC's proposed VIC as premature at this time, given provisions of Act 62 authorizing an independent grid integration analysis, and given that DESC has only sought to quantify integration costs rather than calculating both costs and benefits as required by Act 62. As further reason to reject the VIC as unjust and unreasonable at this time, Conservation Groups and other intervenors' expert witnesses have identified a number of flaws with DESC's Variable Integration Charge Study ("Integration Charge Study") and approach that need to be addressed.

Conservation Groups also raise in this prehearing brief the issue of planning optimization as it relates to DESC's chosen method for calculating avoided costs: the difference in revenue requirements method. Conservation Groups request that the Commission require DESC to rely on an optimized resource plan as required by federal law.

I. Statement of the Case

On May 16, 2019, the Governor of South Carolina signed into law Act 62, 2019-2020 Gen. Assemb., 123rd Sess. (S.C. 2019) ("Act 62"), which directs the Commission

to address all renewable energy issues in a fair and balanced manner, *considering the costs and benefits to all customers of all programs and tariffs that relate to renewable energy and energy storage, both as part of the utility's power system and as direct investments by customers for their own energy needs and renewable goals*. The commission also is directed to ensure that the revenue recovery, cost allocation, and rate design of utilities that it regulates are *just and reasonable and properly reflect changes in the industry as a whole*, the benefits of customer renewable energy, energy efficiency, and demand response, as well as any

utility or state-specific impacts unique to South Carolina which are brought about by the consequences of this act.

S.C. Code Ann. § 48-51-05 (emphasis added). Act 62 requires Commission decisions in avoided cost dockets to be “just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA, and the Federal Energy Regulatory Commission’s implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public.”²

Specifically regarding the integration of renewable energy, a separate provision of Act 62 authorizes the Commission and the Office of Regulatory Staff to “initiate an independent study to evaluate the integration of renewable energy and emerging energy technologies into the electric grid for the public interest.”³ This study will “evaluate what is required for electrical utilities to integrate increased levels of renewable energy and emerging energy technologies while maintaining economic, reliable, and safe operation of the electricity grid in a manner consistent with the public interest.”⁴ The Commission recently established a rulemaking proceeding related to contracting for this independent study and other Act 62 provisions. The pending rulemaking will “provide a documented procedure including, but not limited to, accepting applications from prospective consultants and experts, public interviews, and final decisions made by Commissioners related to the pool of applicants.”⁵

² *Id.*

³ S.C. Code 58-37-60.

⁴ *Id.*

⁵ Notice of Drafting, S.C. Public Service Commission Docket No. 2019-289-A (Sept. 4, 2019).

On May 30, 2019, the Commission opened this proceeding pursuant to Section 58-41-20 of Act 62, which directs the Commission to establish DESC's and other electric utilities' standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other necessary terms or conditions. In implementing this requirement, the Commission "shall treat small power producers on a fair and equal footing with electrical utility-owned resources" by ensuring that rates accurately reflect avoided costs; that power purchase agreements and related terms and conditions are commercially reasonable and consistent with federal law; and that avoided energy, capacity, and ancillary services are fairly quantified.⁶ The Commission is also required to consider in this proceeding whether to prohibit "the electrical utility reducing the price paid to the small power producer based on costs incurred by the electrical utility to respond to the intermittent nature of electrical generation by the small power producer."⁷

In the current proceeding, DESC has proposed a Variable Integration Charge aimed exclusively at solar power producers (or qualifying facilities, "QFs"). This premature proposal fails to account for relevant and pending study provisions of Act 62 and the requirement to consider both costs and benefits of renewable programs. The proposed VIC further runs afoul of the legislative intent of Act 62 to address renewable energy issues in a fair and balanced manner and the intent of both federal and state law to encourage renewable energy.⁸ Beyond concerns regarding the timing and impact of

⁶ S.C. Code § 58-41-20(B).

⁷ S.C. Code § 58-41-20(E)(3)(b).

⁸ See S.C. Code § 58-41-20(F) (referring to the "state's policy of encouraging renewable energy"); U.S.C.A. § 824a-3 (setting forth requirements to "encourage cogeneration and small power production [from renewables]"); see also *American Paper Inst. v. Am. Elec. Power Serv. Corp.*, 461 US 402, 405 (1983) ("Section 210 of PURPA was designed to encourage the development of cogeneration and small power production facilities"); *FERC v. Mississippi*, 456 US 742, 750 (1982) ("Congress believed that

DESC's proposed charge, Conservation Groups have also identified a number of issues regarding the analysis underlying the VIC that warrant its rejection in this proceeding.

If approved, DESC's proposed VIC will prematurely and unfairly raise costs for solar power projects to operate in South Carolina and will have the impact of discouraging rather than encouraging renewable energy investments in South Carolina.

II. Identification of Witnesses

On August 23, 2019, DESC filed the direct testimony of John H. Raftery, Joseph M. Lynch, Eric H. Bell, John E. Folsom, Jr., and Dr. Matthew W. Tanner. On September 20, 2019, DESC filed the amended direct testimony of John E. Folsom, Jr. and James Neely. On September 23, 2019, Johnson Development Associates, Inc. ("JDA") filed the direct testimony of Rebecca Chilton; the Solar Business Alliance ("SBA") filed the direct testimony of Ed Burgess, Hamilton Davis, John Downey, and Steven Levitas; and the Conservation Groups filed the expert testimony and report of Derek P. Stenclik. Also on September 23, 2019, ORS filed the direct testimony of Brian Horii and Robert A. Lawyer.

The Conservation Groups have pre-filed the expert testimony and expert report of Derek P. Stenclik, an expert in production cost modeling for solar integration and battery energy storage. Witness Stenclik reviewed and evaluated DESC's Variable Integration Study underlying the proposed VIC. Witness Stenclik's analysis addresses a number of concerns with the Proposed Variable Integration Charge and underlying study. Witness Stenclik's analysis supports the Conservation Groups' recommendation that the Commission reject the charge as premature, unjust, and unreasonable at this time.

increased use of these sources of energy would reduce the demand for traditional fossil fuels" and it recognized that electric utilities had traditionally been "reluctant to purchase power from, and to sell power to, the nontraditional facilities.").

III. Legal Issues

a. The Integration Charge is Premature Given Pending Independent Renewable Integration Study and Failure of DESC to Consider Integration Benefits

DESC's proposed VIC is premature at this time. Act 62 authorizes the Commission and the Office of Regulatory Staff ("ORS") to initiate an independent study to evaluate integration of renewable energy and emerging energy technologies into the electric grid for the public interest.⁹ This effort is now underway, with the Commission issuing its notice of rulemaking regarding retention of independent consultants. The results of this independent study will better inform whether any charges reflecting the costs of grid integration costs are appropriate.

Furthermore, as set forth in Act 62, the "Commission is directed to address all renewable energy issues in a fair and balanced matter, considering the costs *and benefits* to all customers of all programs and tariffs that relate to renewable energy and energy storage"¹⁰ DESC's proposed VIC seeks to impose grid integration costs upon QFs without addressing any ancillary services benefits that renewable energy and emerging energy resources can provide. The one-sided imposition of integration charges (without accounting for benefits) would unfairly impose costs on independently produced renewable energy, undermining the intent of both state and federal law to encourage small power production of renewable energy.

⁹ S.C. Code Ann. § 58-37-60(A).

¹⁰ S.C. Code Ann. § 48-51-05.

b. The VIC is Unjust and Unreasonable due to Multiple Methodological Flaws in DESC's Variable Integration Cost Study

Beyond concerns with the timing of the proposed integration charge and failure to consider potential benefits of renewable energy integration, DESC's Variable Integration Cost Study ("Integration Cost Study") underlying the proposed Integration Charge includes several flaws that lead to an inaccurate conclusion regarding the amount of additional operating reserves DESC needs to account for increased solar penetration and associated increases in intermittent generation.

Act 62 charges the Commission with ensuring that "rates for the purchase of energy and capacity fully and accurately reflect the utility's avoided costs..."¹¹ Although the basic premise that adding variable renewable generation to the grid may increase some aspects of operating costs is not wholly unreasonable, the methodology used in DESC's Integration Study to develop the VIC is unreasonable because (1) it incorrectly analyzes solar data and therefore overstates associated reserve requirements through incorrect solar data analysis; and (2) it fails to reflect actual utility reliability requirements, capabilities, and operations.¹²

If a variable integration charge is imposed at some point in the future, it must reflect actual expenses incurred. If the VIC, as currently proposed, were approved, it would impose a charge that does not reflect actual increased reserve requirements or actual impacts on operating costs DESC will likely experience as a result of increased solar generation.

¹¹ See S.C. Code 58-41-20(B)(1); see also FERC Order No. 69, *Small Power Production and Cogeneration Facilities; Regulations Implementing Section 210 of PURPA*, 45 Fed. Reg. 12,214, at 12,222 (1980) (establishing the "full avoided cost standard" and citing commenter perspectives regarding benefits to ratepayers and the nation of encouraging small power production beyond just avoided cost savings).

¹² Direct Testimony of Derek Stenclik, Docket No. 2019-184-E, at p. 4.

c. The Commission Should Require DESC to Optimize its Resource Plan Underlying Avoided Cost Calculations

Act 62 requires Commission decisions in avoided cost dockets to be “just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA, *and the Federal Energy Regulatory Commission’s implementing regulations and orders*, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public.”¹³ FERC Order 69 implementing PURPA explains that the difference in revenue requirements (“DRR”) method, which DESC relies upon to calculate its avoided costs, requires use of an “optimal capacity expansion plan.”¹⁴ The DRR method:

[C]alculate[s] the total (capacity and energy) costs that would be incurred by a utility to meet a specified demand in comparison to the cost that the utility would incur if it purchased energy or capacity or both from a qualifying facility to meet part of its demand, and supplied its remaining needs from its own facilities. The difference between these two figures would represent the utility’s net avoided cost. In this case, the avoided costs are the excess of the total capacity and energy cost of the system *developed in accordance with the utility’s optimal capacity expansion plan*.¹⁵

The FERC order goes on to specify that “An optimal capacity expansion plan is the schedule for the addition of new generating and transmission facilities which, based on an examination of capital, fuel, operating and maintenance costs, will meet a utility’s projected load requirements at the *lowest total cost*.”¹⁶

Conservation Groups have not submitted testimony on this particular issue, but raise here for the Commission’s consideration that based on DESC’s prefiled testimony

¹³ *Id.*

¹⁴ 45 Fed. Reg. at 12,216 (emphasis added).

¹⁵ *Id.*

¹⁶ *Id.* at 12,216 n.6 (emphasis added).

and most recent IRP, it does not appear that DESC has complied with this federal requirement regarding use of the DRR method. Specifically, it does not appear that DESC has complied with the requirement to use an optimal capacity expansion plan. This has been an issue in past Commission proceedings and in a case currently pending appeal before the South Carolina Supreme Court.¹⁷ Conservation Groups respectfully request that the Commission require DESC to comply with this federal law requirement, and the related Act 62 requirement that the avoided cost dockets comply with federal law, including the Federal Energy Regulatory Commission's implementing regulations and orders.

IV. Pre-filed Testimony Summary

The following testimony filed by the parties relates to the proposed variable integration charges.

a. Dominion Energy South Carolina

DESC Witness Matthew Tanner's pre-filed direct testimony explains the rationale and methodology of the Variable Integration Cost Study underlying the Company's proposed Variable Integration Charge.¹⁸ Witness Tanner's testimony explains that "the purpose of the Integration Study was to estimate the impacts that solar installations will have on DESC's system operations and to determine "the resulting incremental costs for projects that are already under contract and have a variable integration charge clause in their [PPA]."¹⁹ To do so, the Integration Study compared an "Initial Solar" case to an "All Solar Case" and then deduced the additional reserve requirements associated with

¹⁷ S.C. Coastal Conservation League and Southern Alliance for Clean Energy, et al. v. Dominion Energy South Carolina, Inc., f/k/a South Carolina Electric & Gas Company, et al., App. Case No. 2018-001165.

¹⁸ Direct Testimony of Matthew Tanner, Docket No. 2019-184-E.

¹⁹ *Id.* at pp. 5-6.

the more solar coming onto DESC's system.²⁰ Based on the Integration Study's results, DESC is proposing a \$4.14/MWh integration charge upon on all solar QFs that have a variable integration charge clause in their PPAs.²¹

Dominion Witness James Neely indicated in his pre-filed direct testimony that there are approximately 700 megawatts (MW) of PPAs with a variable integration charge clause that would allow DESC to impose the proposed \$4.14/MWh charge.²² Witness Neely stated that additional reserves equal to 35% of the installed solar capacity is sufficient to cover most of the one-hour intermittency attributed to solar QFs, but that as more solar is added to the DESC system, that percentage may change.²³

b. Conservation Groups

Conservation Groups filed the direct testimony and expert report of Derek Stenlik to review and provide analysis of DESC's proposed Variable Integration Charge. In his pre-filed testimony, Mr. Stenlik identifies several methodological errors in the Integration Study and makes recommendations as to how these issues can be rectified.

Witness Stenlik identifies four key issues related to DESC's Integration Costs Study provided in support of the VIC: 1) inappropriately high reserve requirements; 2) flawed modeling methodology; 3) failure to evaluate less costly methods of integrating low-cost renewables, and 4) the fundamental flaw of targeting a specific technology with a variable integration charge.²⁴

²⁰ *Id.* at p. 6.

²¹ *Id.* at p. 11.

²² Direct Testimony of James W. Neely, Docket No. 2019-184-E, at p. 9.

²³ *Id.* at p. 10.

²⁴ Direct Testimony of Derek Stenlik, Docket No. 2019-184-E, at pp. 5-6.

i. Inappropriately High Reserve Requirements

DESC's modeling and planning analyses inaccurately capture current operating practices—which do not require operating reserves for existing solar generation. DESC's analysis further failed to account for aggregation benefits, which naturally reduce forecasting errors and resource variability as the solar generation fleet grows. DESC's analysis used an excessive 4-hour ahead forecast which excluded offline combined cycle generation capacity as available reserves. Finally, the operating reserve methodology used an overly stringent 99% confidence interval, which overstates the required operating reserves.²⁵

ii. Flawed Modeling Methodology

The flawed modeling methodology as implemented by DESC leads to grossly overstated reserve costs and requirements. DESC imposed fixed additional solar reserve requirements 8,760 hours/year rather than looking to hourly forecasted solar generation. DESC failed to include significant additional reserve capacity from Fairfield Storage Pumped Storage Plant and interruptible load available as forecast error reserves. Finally, DESC failed to account for neighboring power systems, which DESC regularly uses.²⁶

iii. Failure to Evaluate Less Costly Methods of Integrating Low-Cost Renewables

DESC failed to include existing demand response resources to the fullest extent possible, thereby excluding valuable operating reserve resources from its analysis. DESC failed to evaluate the full range of potential services from new battery storage and CT units, thereby overstating the cost to implement these resources for mitigation. Finally,

²⁵ *Id.* at 5.

²⁶ *Id.* at 5-6.

DESC failed to evaluate potential ratepayer cost reductions through participation in a larger balancing area or by implementing new demand response, flexible solar, combined cycle upgrades, and discounting of solar forecasts.²⁷

**iv. Fundamental Flaw of Targeting Specific Technology with
Variable Integration Charges**

DESC singles out a specific technology for variable integration charges when every generation technology has limitations. Rather than singling out a subset of generation resources, the system should be optimized to deliver least cost to ratepayers overall.

DESC must reanalyze its data to reflect plan, forecasting, and system aggregation benefits before any variable integration cost is even considered by the Commission. DESC should address the concerns raised in Witness Stenlik's testimony and report, implement new modeling tools and updated methodologies, and adopt industry recognized practices related to reserves and variable renewable integration studies. The Commission should also consider requiring DESC to utilize a Technical Review Committee (TRC) of outside experts on variable renewable integration, as TRCs have proved to be successful in this context in helping guide utility integration studies and employing latest and best integration study practices.²⁸

An important distinction exists between proposing reserve requirements for long-term planning studies, which may be appropriate, and basing actual variable integration charges on modeling analyses without any supporting operational experience, which is

²⁷ *Id.* at 6.

²⁸ *Id.* at 7.

never appropriate. Until more is known about DESC's actual operational requirements, it is inappropriate for DESC to add contractual costs on long-term PPAs.

c. Solar Business Alliance

The direct testimony of Ed Burgess, filed on behalf of the Solar Business Alliance also commented on DESC's proposed Variable Integration Charge.²⁹ Witness Burgess' prefiled testimony explained that (1) it is premature to propose any integration charges on QFs until the true costs of integration can be more accurately quantified through an independent analysis as contemplated by Act 62; (2) the analysis relied on by DESC includes several fundamental flaws that exaggerate the projected costs of integration; (3) there is little evidence in South Carolina or in other jurisdictions that the magnitude of the integration costs projected by DESC will materialize any time soon; (4) DESC's proposal is incomplete since it only considers costs and not benefits, contrary to Act 62's requirements; and (5) the proposed Charge is linked to a hypothetical model rather than real-world costs and introduces significant uncertainty that unfairly and unlawfully penalizes QF projects.³⁰

d. Office of Regulatory Staff

The direct testimony of Brian Horii, filed on behalf of ORS also evaluated and critiqued DESC's proposed Variable Integration Charge.³¹ Witness Horii's pre-filed testimony recommends that the Commission reject the proposed VIC.³² Witness Horii explained that assumptions used in the Integration Study "overstate the risk of uncertain variable generation to the Company which inflates the resulting variable integration

²⁹ Direct Testimony of Edward Burgess, Docket No. 2019-184-E, pp. 61-95.

³⁰ *Id.* at pp. 62-63.

³¹ Direct Testimony of Brian Horii, Docket No. 2019-184-E.

³² *Id.* at p. 9.

costs.”³³ Specifically, Witness Horii found that the cost of solar integration was overestimated due to: (1) the Company’s failure to conduct an analysis that balances risks and costs to determine the additional amount of operating reserves that would need to be carried due to the existence of variable solar resources on the system; (2) the Company being unreasonably risk averse in its determination of the amount of additional operating reserves due to potential solar forecast error; and (3) the Company’s overstatement of the amount of operating reserves needed due to holding reserve levels constant over each day.³⁴ Witness Horii proposes an adjusted Integration Charge of \$2.29/MWh.³⁵ Witness Horii’s testimony also stresses the importance of having stakeholder engagement on the Variable Integration Charge issue, explaining that since the Charge would primarily impact solar QFs, the solar community should have a voice in the determination of the charge.³⁶

V. Other Relevant Info

The Conservation Groups do not submit any additional relevant info at this time, but appreciate the opportunity to file this prehearing brief.

³³ *Id.* at p. 10.

³⁴ *Id.* at pp. 10-11.

³⁵ *Id.* at p. 19.

³⁶ *Id.* at p. 24.